Bradley **Kohler**

B.Eng. Mechatronics Engineering · 6 Years of Professional Work Experience

Toronto, ON, Canada

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Skills

Programming Languages	Machine Learning	Embedded Systems	Operating Systems	Hardware Design & CAD	Modelling, Simulation & Math	DevOps / CI Tools	Wireless Protocols
C, C++, C#	PyTorch	STM32	Linux	SolidWorks	Simulink	Docker	ZigBee
Python	TensorFlow	Nordic	Debian	AutoCAD	MATLAB	Jenkins	Thread
Java	Nvidia CUDA	Qualcomm	Ubuntu	Eagle	MapleSim	TravisCI	BLE
BASH		FreeRTOS	Windows	NI Multisim	Maple 18	CircleCI	LTE (NB, MTC)
Verilog HDL		ChibiOS	AndroidOS		NumPy	Bamboo	MAC 802.15.4
HTML/CSS/JavaScript		mbedOS			Eigen		

Work Experience

STMicroelectronics *(NYSE:STM)*

Waterloo, Ontario

IEEE 802.15.4 Wireless Software Developer *(GPM Division)* — *May 2023 - Present*

- Developed ZigBee, ZigBee Direct, Thread, BLE, and radio concurrency applications for STM32WBA microcontrollers.
- Led debugging and integration efforts across ZigBee APS, ZigBee NWK, and MAC 802.15.4 layers.
- Improved application-level reliability through system-level coordination and test automation.

L2/L3 LTE Wireless Software Developer *(WBL Division)* — *Sept. 2021 - May 2023*

- Implemented features for LTE NB-IoT and MTC stacks, focusing on the Radio Resource Controller (RRC).
- Collaborated with L1, PDCP, RLC, MAC, and NAS stack teams to troubleshoot and optimize radio behavior.
- Diagnosed and resolved stack issues using Amarisoft and Rohde & Schwarz CMW wireless communication testing equipment.
- Built and maintained lab machines equipped with FPGAs, ASICs, Amarisoft, and Rohde & Schwarz equipment.
- Authored AsnGen, a Python code generator enabling a reduction of read-only data by 148KB (48%) in existing encoders and decoders.

Labforge Inc.

Waterloo, Ontario

Smart Camera Software & Embedded Firmware Developer — *May 2020 - Sept. 2021*

- Built object tracking and re-identification systems in C++ and Python for the ICTN project.
- Trained PyTorch models (ResNet-18, ResNet-50, and EfficientDet) using private datasets.
- Co-developed a robust calibration engine and state estimation framework for stereo cameras.
- Contributed to product demonstration for the Royal Canadian Air Force.

Northern Digital Inc. (Internship)

Waterloo, Ontario

Embedded Firmware Developer *(R&D Division)* — *May 2019 - Sept. 2019*

- Developed low-level firmware for VR hand controllers (IMUs, ADCs, DACs, FLASH, UART, etc.).

Advanced Researcher *(R&D Division)* — *May 2018 - May 2019*

- Designed a multi-sensor handheld system to enhance Polaris Vega tracking accuracy.
- Built data fusion algorithms (pose estimation, vector, quaternion) in C++ and Python.
- Created a fast sensor simulation framework and visualization tools for analysis.

Continues...

Education

McMaster University

Hamilton, Ontario

Mechatronics Engineering Co-op — *Sept. 2014 - May 2020*

- McMaster Cumulative Grade Point Average 3.7/4.0
- McMaster Engineering Co-op Student of the Year Nominee

Projects

Neural Network Log Analysis

Waterloo, Ontario

Researcher & Developer — *Oct. 2022 - May 2023*

- Developed several neural network models alongside a PhD graduate to detect anomalies in wireless air transmissions and stack procedures.
- Used models such as RNN, RNN Attention-Based, and Transformer to detect anomalies in the nightly runs.

JobFunnel

Waterloo, Ontario

Developer — *June - Sept. 2019*

- Developed webcrawling application alongside other developers to help find and organize job postings with 1900+ stars on GitHub.
- Glassdoor and Indeed implemented CAPTCHAs shortly after the release.